US ERA ARCHIVE DOCUMENT

Source Area RI/RA Status

■ Kalamazoo | Ceresco | Marshall | | Source | Source | | Source | Source | | Company | |

Remedial Investigation

- Address Data gaps A1/A2
- Supplemental RI in progress

Remedial Action

RA Work Plan in development



Source Area
July 31, 2012
Supplemental RI





Submerged Oil

Agitation Effectiveness



Progress

- Delta Z/EE/H (Complete)
- MP 21.5 (Complete)
- MP 14.75
- Ceresco

Scope of Work Modifications

- Repeat Delta Z test?
- Coring?

Schedule

TBD

EVALUATING THE EFFICACY AND POTENTIAL ECOLOGICAL EFFECTS OF INSITU SEDIMENT AGITATION (SUMMER 2012)

	Time after Agitation (hours)							
	-1.0	0.0	0.25	0.5	1.0	2.0	4.0	4.5
Field Task / Measurement								
Poling and associated measurements outside of enclosure	×							
Collect depth-integrated water sample	×	×					⊠	
Collect sheen sample	×	×						
Collect sediment cores (3) within cylinder and composite sediment	×							
Measure turbidity within cylinder (6 inch intervals)	×	×		M	×	×		
Measure DO within cylinder (6 inch intervals)	M	M	⋈	M	M	⋈	⋈	
LISST particle size analysis	×	⋈		×	⋈			
Laboratory Analysis Task								
TSS on depth-integrated water sample	×							
Oil fingerprinting on suspended solids and filtrate (filtered water) from depth-integrated water sample	×	×						
Oil fingerprinting on sediment core samples	M							M
Wet + dry bulk density, TOC on sediment core samples	M							×
UV fluorescence microscopy on suspended solids and sediment core samples	M	×						
UV fluorescence microscopy on sediment core samples	M							×
Oil fingerprinting on sheen sample	×	×						

Submerged Oil

Quantification

Battle Creek

EMERGENCY
RESPONSE

Warshall
Source

Sediment Core Collection

Sediment Core Logging

QA/QC



Submerged Oil

Quantification Core-Logging





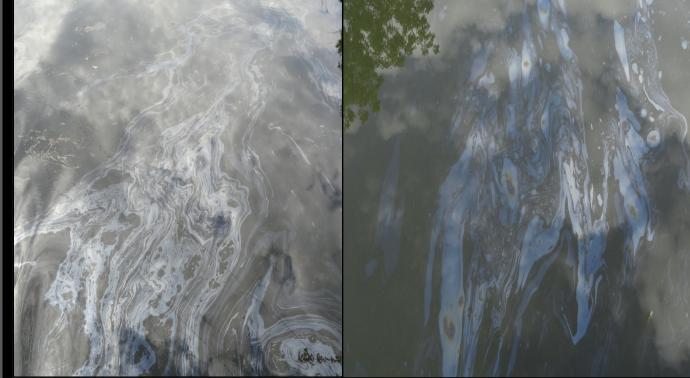
Emerging Oil

Management

Sheen Tracking

GIS Review





Emerging Oil

Management

Battle Creek | Ceresco | Marshall | | Source | Ceresco | Ceresco

<u>Objective</u>

Modulate EOMP to exclude responses to innocuous or deminimus sheen

Response Criteria

- Location
- Area of Impact
- Oil Character
- Other Considerations



Containment

Ceresco Dam/E4

Ceresco Dam

Vegetation management

E4 System

- Oil Migration (Poling)
- Monitoring/Maintenance Plan(s)
- Curtain Maintenance



TEDSTA

Sediment Trap

Monitoring & Maintenance

Phase I Traps (6)

- Monitoring schedule
- Poling Results

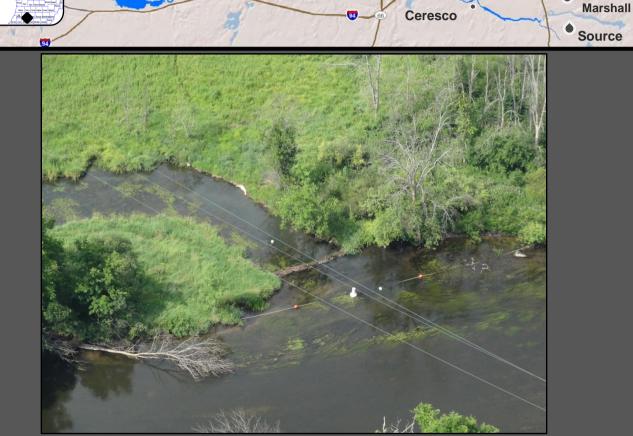
Phase II Traps (14)

- Permit acquisition
- Structure installation
- Monitoring
- River stage considerations

Recovery Considerations

Reporting Schedule

Quarterly



Kalamazoo

Battle Creek

TEDSTA

TAL PROTECT